

REQUEST FOR ACCESS OF ABANDONED APPLICATION UNDER 37 CFR 1.14(a)

REQUEST FOR ACCESS OF ABANDONED	
In re Application of	
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> RECEIVED SEP 19 2001 File Information Unit </div>	
Application Number	Filed
08/359945	12/20/94
Group Art Unit	Examiner

Assistant Commissioner for Patents
Washington, DC 20231

I hereby request access under 37 CFR 1.14(a)(3)(iv) to the application file record of the above-identified ABANDONED application, which is: (CHECK ONE) **16261-822-1** **16261-822-2**

Identified ABANDONED application. Whatever

(A) referred to in United States Patent Number 5851832 column _____

(B) referred to in an application that is open to public inspection as set forth in 37 CFR 1.11, i.e., Application No. _____ filed _____ on page _____ of paper number _____

(C) an application that claims the benefit of the filing date of an application that is open to public inspection, i.e., Application No. _____ filed _____ or

(D) an application in which the applicant has filed an authorization to lay open the complete application to the public.

Please direct any correspondence concerning this request to the following address:

Signature

Signature
Thomas Hale
Typed or printed name

Typed or printed name

FOR STO USE ONLY

Approved by: John
(initials)

Unit:



US005851832A

United States Patent [19]

Weiss et al.

[11] Patent Number: 5,851,832
 [45] Date of Patent: Dec. 22, 1998

[54] IN VITRO GROWTH AND PROLIFERATION OF MULTIPOTENT NEURAL STEM CELLS AND THEIR PROGENY

[75] Inventors: Samuel Weiss; Brent Reynolds, both of Alberta, Canada; Joseph P. Hammang; E. Edward Baetge, both of Barrington, R.I.

[73] Assignee: Neurospheres, Ltd., Canada

[21] Appl. No.: 486,648

[22] Filed: Jun. 7, 1995

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 270,412, Jul. 5, 1994, abandoned, which is a continuation of Ser. No. 726,812, Jul. 8, 1991, abandoned, and a continuation-in-part of Ser. No. 385,404, Feb. 7, 1995, abandoned, which is a continuation of Ser. No. 961,813, Oct. 16, 1992, abandoned, which is a continuation-in-part of Ser. No. 726,812, and Ser. No. 359,945, Dec. 20, 1994, abandoned, which is a continuation of Ser. No. 221,655, Apr. 1, 1994, abandoned, which is a continuation of Ser. No. 967,622, Oct. 28, 1992, abandoned, which is a continuation-in-part of Ser. No. 726,812, Jul. 8, 1991, abandoned, and Ser. No. 376,062, Jan. 20, 1995, abandoned, which is a continuation of Ser. No. 10,829, Jan. 29, 1993, abandoned, which is a continuation-in-part of Ser. No. 726,812, and Ser. No. 149,508, Nov. 9, 1993, abandoned, which is a continuation-in-part of Ser. No. 726,812, and Ser. No. 311,099, Sep. 23, 1994, abandoned, which is a continuation-in-part of Ser. No. 726,812, and Ser. No. 338,730, Nov. 14, 1994, abandoned, which is a continuation-in-part of Ser. No. 726,812.

[51] Int. Cl. 6 C12N 5/06; C12N 5/08; C12N 5/02

[52] U.S. Cl. 435/368; 435/325; 435/366; 435/383; 435/384

[58] Field of Search 435/240.2, 325, 435/366, 368, 377, 383, 384

References Cited

U.S. PATENT DOCUMENTS

4,753,635	6/1988	Sagen et al.	604/49
4,980,174	12/1990	Sagen et al.	424/563
5,082,670	1/1992	Gage	424/520
5,175,103	12/1992	Lee et al.	435/172.3
5,411,883	5/1995	Boss et al.	435/29
5,612,211	3/1997	Wilson et al.	435/378

FOREIGN PATENT DOCUMENTS

0 233 838	8/1987	European Pat. Off.
89/03872	5/1989	WIPO
90/06757	6/1990	WIPO
91/02003	2/1991	WIPO
91/09936	7/1991	WIPO
91/17242	11/1991	WIPO
93/01275	1/1993	WIPO
93/09802	5/1993	WIPO
94/03199	2/1994	WIPO

OTHER PUBLICATIONS

Almazan et al., "Epidermal Growth and Bovine Growth Hormone Stimulate Differentiation and Myelination of Brain Cell Aggregates in Culture," *Developmental Brain Research*, 21:257-264 (1985).

Anchan et al., "Trophic Factors Influence Proliferation of Germinal Neuroepithelial Cells of the Retina," *J. Cell Biol.*, 109:58a, Abstract No. 308 (1989).

Anchan et al., "EGF and TGF- α Stimulate Retinal Neuroepithelial Cell Proliferation in Vitro," *Neuron*, 6(6):923-936 (1991).

Bayer et al., "Neuron production in the Hippocampus and olfactory bulb of the adult rat Brain: addition or replacement?", *Annals NY Acad. Sci.* 457:163-172 (1985).

Björklund et al., "Neural Grafting in Animal Models of Neurodegenerative Diseases," *Ann. New York Acad. Sci.*, 457:53-81 (1985).

Bouvier et al., "Basic Fibroblast Growth Factor (bFGF) Promotes the Survival and Proliferation of Mesencephalic Neuronal Precursors in Vitro," *Society for Neuroscience Abstracts*, vol. 18, Abstract No.: 403.7 (1992).

Boyles et al., "Accumulation of Apolipoproteins in the Regenerating and Remyelinating Mammalian Peripheral Nerve," *J. Biol. Chem.*, 265(29):17805-17815 (1990).

Calof et al., "Analysis of Neurogenesis in a Mammalian Neuroepithelium: Proliferation and Differentiation of an Olfactory Neuron Precursor in Vitro," *Neuron*, 3:115-127 (1989).

Cattaneo et al., "Identifying and Manipulating neuronal stem cells," *TINS*, 14(8): 338-340 (1991).

Cattaneo et al., "Proliferation and differentiation of neuronal stem cells regulated by nerve growth factor," *Nature*, 347:762-765 (1990).

Cepko "Immortalization of neural cells via retrovirus-mediated oncogene transduction," *Ann. Rev. Neurosci.*, 12:47-65 (1989).

Deloulme et al., "Establishment of Pure Neuronal Cultures From Fetal Rat Spinal Cord and Proliferation of the Neuronal Precursor Cells in the Presence of Fibroblast Growth Factor," *Journal of Neuroscience Research*, 29:499-509 (1991).

Dunnnett et al., "Dopamine-rich transplants in experimental Parkinsonism," *TINS*, 266-270 (Jul. 1983).

Emerich et al., "Behavioral Effects of Neural Transplantation," *Cell Transplantation*, 1:1-27 (1992).

Faaland et al., "Rapid uptake of tyrphostin into A431 human epidermoid cells is followed by delayed inhibition of epidermal growth factor (EGF)-stimulated EGF receptor tyrosine kinase activity", *Mol. Cell Biol.* 11(5):2697-2703 (1991).

(List continued on next page.)

Primary Examiner—George C. Elliott

Assistant Examiner—Johnny F. Railey, II

Attorney, Agent, or Firm—Flehr Hohbach Test Albritton & Herbert LLP

[57] ABSTRACT

A method for the in vitro proliferation and differentiation of neural stem cells and stem cell progeny comprising the steps of (a) isolating the cells from a mammal, (b) exposing the cells to a culture medium containing a growth factor, (c) inducing the cells to proliferate, and (d) inducing the cells to differentiate is provided.